

U.S.S.N. 09/658,390

Filed: September 8, 2000

**AMENDMENT AND RESPONSE TO OFFICE ACTION**

**Remarks**

Claims 38-49 are pending. Claim 38 has been amended to define the macromer as one which contains at least two polymerizable groups and to define the composition as forming a gel upon polymerization. Support for these amendments can be found in the specification at least at page 11, lines 10-13 and page 17, line 25 until page 18, line 7 (at least two polymerizable groups) and page 3, lines 4-12 (gel).

The claims, as amended, define compositions that contain at least one macromer with hydrophilic and hydrophobic regions and with at least two polymerizable groups and at least one monomer with a vinyl group. Upon polymerization, the compositions form a gel. The presence of at least two polymerizable groups on the macromer allows for cosslinking and the formation of a gel (*see* page 17, line 25 until page 18, line 7). The hydrophobic regions are critical to the formation of strong and compliant gels (*see* page 13, lines 20-28). The hydrophilic regions attract water and cause the polymer to form a gel, while the hydrophobic regions control and limit water uptake, which results in a stronger gel.

**Rejection Under 35 U.S.C. § 102**

Claims 38-49 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,700,873 to Zajaczkowski et al. ("Zajaczkowski"). Applicants respectfully traverse this rejection to the extent that it is applied to the claims as amended.

Zajaczkowski does not teach the claimed compositions. Zajaczkowski discloses a water-soluble or water-dispersible copolymer. The copolymer may be formed of a water-soluble or water-dispersible macromer ("C") and a monomer ("A" and/or "B") (*see* col. 3, lines 55-58 and

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63-64). The macromer does not contain two or more polymerizable groups. The macromer is defined in the specification by the formula X-(Y)<sub>p</sub>-Z-R, where X is a polymerizable group, Y is a linking group, p is 0 or 1, Z is a water soluble or water dispersible group, and R is a terminal group (col. 5, lines 8-15). The only group that is polymerizable is the X group; and there is only one X group per macromer molecule. The X group co-polymerizes with the monomer (col. 5, lines 9-11 and 16-33). None of the remaining groups in the macromer contain polymerizable moieties. For example, the terminal group, R, is typically an -OH or a short chain alkyl; it may be acidic, ionic, hydrophobic, or hydrophilic (col. 6, lines 43-50). The linking group, Y, is a divalent group does not contain any polymerizable groups once it is integrated in the macromer (see e.g. col. 5, lines 35-60). The water-soluble or water-dispersible group, Z, must be "essentially unreactive at copolymerization conditions" (col. 5, lines 13-14). Thus the macromer contains *only one* polymerizable group. Therefore Zajaczkowski does not teach a macromer with *at least two* polymerizable groups.

Further, Zajaczkowski's copolymers do not form gels upon polymerization. As discussed in the specification of the pending application, the macromer must contain at least two polymerizable groups to crosslink (*see* page 17, line 25 until page 18, line 7). Zajaczkowski does not teach a macromer or monomer with at least two polymerizable groups. In fact, Zajaczkowski teaches that the copolymer does not form a gel (*see* abstract and col. 3, lines 4-8). Therefore, Zajaczkowski does not teach a copolymer which forms a gel upon polymerization.

Zajaczkowski does not teach a macromer which contains hydrophobic and hydrophilic regions. Zajaczkowski teaches that the macromer is hydrophilic (*see* col. 2, lines 66-67). While

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Zajaczkowski notes that the copolymer that forms the macromer may contain a small amount of hydrophobic groups, the resulting macromer is hydrophilic. Thus the amount of hydrophobic groups must so small that it does not "render the resulting macromer water-insoluble or non-water-dispersible." (col. 6, lines 38-39) Therefore, the resulting macromer does not contain a hydrophobic region. Since Zajaczkowski does not teach every limitation of the claims, claims 38-49, as amended, are novel over Zajaczkowski.

**Rejection Under 35 U.S.C. § 103**

Claims 38-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Zajaczkowski. Applicants respectfully traverse this rejection to the extent that it is applied to the claims as amended.

As discussed above, Zajaczkowski describes compositions which do not form gels. Zajaczkowski teaches a copolymer which may be formed from a macromer and monomer, where the macromer contains only one polymerizable group. This copolymer does not form a gel upon polymerization. The only description of a gel-forming copolymer is one formed from water-soluble monomers (col. 3, lines 1-4). Thus, Zajaczkowski does not teach the combination of a macromer and a monomer which form a gel upon polymerization.

Further, Zajaczkowski teaches away from copolymers that form gels (*see* col. 3, lines 4-8). Zajaczkowski teaches that the formation of gels is problematic since gels cannot be processed for their desired applications (col. 1, lines 19-26). Thus Zajaczkowski does not even suggest compositions that form gels. Therefore claims 38-49, as amended, are not obvious over Zajaczkowski.

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Allowance of claims 38-49, as amended, is respectfully solicited.

Respectfully submitted,

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**Certificate of Facsimile Transmission**

I hereby certify that this Amendment and Response to Office Action, and any documents referred to as attached therein are being facsimile transmitted on this date, April 7, 2003, to the Commissioner for Patents, U.S. Patent and Trademark Office, Washington, DC 20231.

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